

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A classifier for segregating particles by size or density, said classifier comprising:

a fluidization chamber adapted to contain a fluidized bed;

a fluidization device for providing a flow of fluidization fluid to enter into the fluidization chamber from below such that the fluidization fluid may flow upwardly in the chamber; and

at least one array of inclined plates mounted within the fluidization chamber positioned such that in use, particles elutriated by the upwardly flowing fluidization fluid within the chamber flow upwardly into the array where the particles are caused to be segregated between the plates, and to report above or below the plates according to the size or density of the particles, the fluidization chamber having a plate-free zone immediately above and below the array.

2. (Canceled)

3. (Currently Amended) A classifier as claimed in claim 1 wherein said array of inclined plates comprises an array of parallel equally spaced plates extending across said fluidization chamber so that the plates in the array do not form a stepped arrangement.

4. (Canceled)

5. (Previously Presented) A classifier according to claim 1 wherein two or more arrays of inclined plates are provided, each array being vertically spaced from the or each other array, and the arrays dividing the fluidization chamber into zones.

6. (Original) A classifier as claimed in claim 5 wherein the length of each plate is an array, the angle of inclination of the plates, and the spacing between plates in that array are selected to enable particles of a predetermined size or density to pass through the array when elutriated at a predetermined rate by the fluidization fluid, while inhibiting particles of greater size or density from passing through the array.

7. (Previously Presented) A classifier as claimed in claim 1 wherein a feed fluid incorporating particles to be classified is fed into the fluidization chamber between two of the arrays of inclined plates.

8. (Previously Presented) A classifier as claimed in claim 1 wherein the particles are fed into the fluidization chamber with the fluidization fluid.

9. (Currently Amended) A method of classifying particles by size or density, the method comprising the steps of:

providing a fluidized bed within a fluidization chamber in which is positioned at least one array of inclined plates that are parallel and immediately adjacent one another in a non-stepped manner, a plate-free zone being present above and below the array;

feeding the particles into the fluidized bed such that they flow upwardly into the array, for causing the particles to be segregated between the plates and to report above or below the plates according to the size or density of the particles; and

withdrawing particles from the chamber at one or more predetermined locations.

10. (Original) A method as claimed in claim 9 wherein the chamber is provided with two or more arrays of said inclined plates, each array being vertically spaced from the or each other array thereby dividing the fluidization chamber into zones, and wherein the withdrawal of particles from the chamber comprises withdrawal from a selected one or more of said zones.

11. (Previously Presented) A method as claimed in claim 9 further comprising providing the said fluidized bed with fluidization fluid at a predetermined rate selected to achieve selected separation of sizes or densities above and below the inclined plates, in combination with selecting sizes, inclination and spacings of the inclined plates.

12. (Previously Presented) A classifier as claimed in claim 1, further comprising the fluidization chamber having a bottom region and an entrance for the fluidization fluid in the bottom region of the fluidization chamber.